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form, operated on this year, the mortality has been only one and one-half per cent.

The giving of an anæsthetic is a far more important part of an operation than is sometimes supposed. Great advance has been made in this as in other departments of surgery, and the so-called "stage of excitement," when the patient was partly anæsthetized, during which, if he happened to be a muscular man, he was expected to make things decidedly lively for all about him, is fortunately a thing of the past.

It is interesting to know that the anæsthetists in St. Mary's Hospital are trained nurses. The one who has had the largest experience, Alice Magaw, reports 14,000 anæsthesias without a single fatality. This is a record of which she may well be proud. The time is near at hand when every hospital will have its trained anæsthetists and it may be that this work will prove to be a new specialty for registered nurses, thus making still broader a field of work which is already crowded with opportunities for usefulness.

This is an age in which empirical and one-sided methods seem to flourish and in which there is evident a popular tendency to "swallow whole" the latest fad, whether medical or theological or theologico-medical (if I may be permitted to coin a word for the need of the hour), instead of obeying the apostolic injunction—"Prove all things, hold fast that which is good."

But it is an age, as well, of steady and most wonderful advance along the lines of scientific research and achievement, and nowhere else in this country is that fact more conclusively demonstrated than at St. Mary's Hospital.

HOW TO PREVENT TYPHOID FEVER

By CHARLOTTE MANDEVILLE PERRY, R.N.
Superintendent of Nurses, Faxton Hospital, Utica, N. Y.

Like tuberculosis, typhoid fever has of late been made the subject of very special scientific study. It is a subject knowledge of which should be distributed as broadcast as the little germs which bacteriology has given us eyes to see lurking in the most unsuspected corners of our surroundings, even stalking forth in broad daylight on the persons of those who are active carriers of the disease. How many know that such persons bear these organisms about with them, not only in the mouth but on the hands "for months, even years?" The question is how we can join forces in stamping out the disease. This inquiry leads to an investigation of the sources of contagion, and next, as to how it is transmitted—two very profitable things for the public to know, for, after all, very little can be done by the doctors and nurses, or by scientific effort, without the aid of the people. Merely to announce facts, startling as they are, is not sufficient; we must grapple with them; the people must be educated.

In the first place, a more wide-spread knowledge of these hosts in ambush would not come amiss; their manner of propagation, the means of overcoming them, and, having vanquished them, of preventing their return. Even if this involves collateral study in subjects like water supply, food, and hygiene, it is worth while to take the trouble because of the benefit to health in general.

Hardly a century has elapsed since Pasteur associated microscopic life with disease. Long and patient study had been devoted to these living organisms. Improved microscopes and culture media aided greatly. Present-day research, statistical reports of committees, doctors' records of cases, and the co-operation of health officers and of boards of health are bringing us some very real results of investigation. It now remains for the people, collectively and individually, to respond intelligently to what is thus laid before their consideration. One instance of this painstaking labor in behalf of the public good is the report of the Merchants' Association of New York, the title of which is "Pollution of New York Harbor as a Menace to Health by the Dissemination of the Intestinal Diseases Through the Agency of the Common House Fly." This report involved an immense amount of work on the part of the committee—work which should bear fruit in abolishing such "intolerable sanitary conditions" as were revealed by this almost herculean task.

Typhoid fever is called an enteric disease; but the fact that the germ is found in the blood (in some rare cases, not in the intestines at all), in the urine, and other secretions of the body, shows that it does not confine itself to its natural stronghold, the alimentary canal. It has been proved that drinking water is the great source of contagion. Milk and other foods are good media, not only for the typhoid bacillus but for other bacteria. That deaths have occurred from the sale of milk from homes which scarlatina has invaded is widely known. Whether individuals and communities are wide awake and conscientious about these facts is the important factor in arresting the spread of disease. In the *Albany Medical Annals* for April, 1907, one physician recommends frequent testing for the typhoid germ of water and milk, blood, urine and fæces of persons who have contracted the disease and of those living in a suspected locality. He speaks of patients who have been discharged too soon from hospitals. To this might be added the starting in early with the use of disinfectants, or, as we say, with typhoid precautions, where there is the suspicion of prodromal symptoms. Certain disinfectants have been discarded, such as bichloride of mercury which hardens nitrogenous waste, forming a strong capsule around the germ, thus protecting it until it bursts from its prison house more vigorous than ever. This disinfectant also stains clothing. In regard to any chemical thus employed, information as to the mode of procedure should be gained—the kind used, and the strength of the solution, and the length of time, which the contagious material should be subjected to the same, are points essential to be known. Up to the present time, chloride of lime has been used for stools and urine. Directions are usually on the wrapper or the container, and the tendency is to use far more than is necessary. This and formalin solution, 1: 1000, have steadily gained favor, the latter for clothes, dishes and utensils, outside the room of the patient. When this part of the disinfection must be done in the room, a 1: 40 solution of carbolic acid may be substituted for it. A 1: 20 solution will eat clothing and rubber, a fact not always known even to physicians, but that it is so will be seen after one or two washings of the fabric from its tearing easily and from the presence of holes. Another objection to carbolic acid is that it is expensive. All clothing and stools, etc., should soak two hours before the solution is thrown into the sewer or on the ground, especially if that be near a well, for, though its passage through the earth filters water to some extent, these microscopic germs are not thereby prevented from being carried into the well, or into running water used for drinking purposes, and this is likely to occasion an epidemic. There is no doubt that heat is to be the great germicide of the future in relation to typhoid bacillus. The efficacy of the above-mentioned disinfectants has been questioned. Massachusetts takes the lead in inventing apparatus which enables us to substitute heat for chemicals. It is thought that by isolating typhoid fever patients and by subjecting all contagious material to a sufficient degree of heat, in one form or another, this dread disease with its high mortality may be more certainly controlled, and the final disposition of all infectious material may not, through the sewers, be a menace to our water supply; also, that the germ may not be carried about generally by persons caring for the patient.

The different tests for typhoid bacillus are of interest; for water and milk there is the litmus test; for urine, the diazo; and for blood, the Widal. In preparing a specimen of any kind for microscopical examination, a container which has been rendered sterile by boiling should be used, in order that the discovered germ may be traced to its true source. Specimens should be clearly labelled; in the case of milk or water, giving the source of supply, the name of the patient or community, the date, etc. It should be remembered that in a pathological laboratory there are many specimens awaiting examination.

In combating the fly, the removal of all putrefying substance is of great importance. Flies congregate near bodies of water, rivers, lakes, docks, etc. They are attracted to all decayed matter, both animal and vegetable, from contact with which they take up millions of harmful bacteria which they leave behind when travelling over a clean area. They are capable of inoculating the human body, and of contaminating food taken into the body. Knowledge of the habits and character of the fly should do more than fill us with horror. The warning thus given should be as the gauntlet thrown down, a call to open, energetic conflict. Every citizen has the right to demand the only remedy: community cleanliness, good sanitation.

SOME OF THE NEWER METHODS OF MEDICAL NURSING *

By GRACE ARNOLD KNIGHT, R.N.
Graduate of Roosevelt Hospital, New York City

As the head nurse of a medical ward in one of our large city hospitals came on duty one morning, an old Irishman beckoned to her, and with the air of one who had an important communication to make confided the fact that he thought it his duty to tell of the dreadful things that the night nurse did. Why, for one thing, she opened the windows to let the night air in, as if every one didn't know that you should never breathe night air. But that was not the worst thing she did—oh no! For she actually left some of the patients, and the sickest ones too, out of doors at night!

Poor Patrick's faith was sorely tried when he found that such dreadful practices were not only to escape condemnation but were to be highly commended; for it is by this method, known as the fresh-air treatment, that several of our foremost physicians are treating their fever patients, especially those with pulmonary diseases. Modern

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* Read at the Eleventh Annual Convention of the Nurses' Associated Alumnæ, San Francisco, Cal., May, 1908.